REMARKS

The final Office Action restricts claims 12-14, 16, and 17 as directed to a distinct or independent invention that was not part of the claims originally presented; rejects claims 1-7, 10, 11, 15, and 18 under 35 U.S.C. § 103(a) as unpatentable over SHIMA et al. (U.S. Patent No. 6,456,714) in view of EDHOLM (U.S. Patent No. 6,449,269), and further in view of AKATSU et al. (U.S. Patent No. 6,496,862); and rejects claims 8, 9, 19, and 20 under 35 U.S.C. § 103(a) as unpatentable over SHIMA et al. in view of EDHOLM. Applicant respectfully traverses this rejection.

By the present amendment, Applicant proposes canceling claims 12-14, 16, and 17 without prejudice or disclaimer and amending claims 1-3, 5, 7-9, and 18-20 to improve form. No new matter has been added by way of the present amendment. Claims 1-11, 15, and 18-20 are pending.

Claims 12-14, 16, and 17 stand restricted as directed to a distinct or independent invention that aw not part of the claims originally presented. Applicant continues to traverse this restriction requirement. However, in an attempt to expedite prosecution, Applicant proposes canceling claims 12-14, 16, and 17 without prejudice or disclaimer.

For at least the foregoing reasons, Applicant requests that the restriction requirement be reconsidered and withdrawn.

Claims 1-7, 10, 11, 15, and 18 stand rejected under 35 U.S.C. § 103(a) as unpatentable over SHIMA et al. in view of EDHOLM, and further in view of AKATSU et al. Applicant respectfully traverses this rejection.

Independent claim 1 is directed to a network switching system that includes a gateway; one or more extension nodes, where each is identified with a unique physical identifier and is selectively identified with a unique telephone number; and a serial bus interconnecting the gateway and the one or more extension nodes. The stream data transferred on the serial bus are exchanged through the gateway between an outside line and an extension node, or between a first extension node and a second extension node. At least of the extension nodes includes a control/memory unit for storing physical identifiers and telephone numbers of the gateway and extension nodes and for controlling the network, thereby allowing the at least one extension node to transmit and receive stream data from outside telephone numbers and from telephone numbers of other extension nodes; an asynchronous interface, for selecting the extension node and controlling a switching timing, connected with the control/memory unit; a rate conversion unit for converting a data rate of the stream data in the network into that in the outside line, or for converting a data rate of stream data in the outside line into that of the network switching system; and an isochronous interface, for transmitting and receiving the stream data, connected with the rate conversion unit. SHIMA et al., EDHOLM, and AKATSU et al., whether taken alone or in any reasonable combination, do not disclose or suggest this combination of features.

For example, SHIMA et al., EDHOLM, and AKATSU et al. do not disclose or suggest at least of the extension nodes including a control/memory unit for storing physical identifiers and telephone numbers of the gateway and extension nodes and for controlling the network, thereby allowing the at least one extension node to transmit and

receive stream data from outside telephone numbers and from telephone numbers of other extension nodes; an asynchronous interface, for selecting the extension node and controlling a switching timing, connected with the control/memory unit; a rate conversion unit for converting a data rate of the stream data in the network into that in the outside line, or for converting a data rate of stream data in the outside line into that of the network switching system; and an isochronous interface, for transmitting and receiving the stream data, connected with the rate conversion unit. The final Office Action appears to rely on SHIMA et al.'s element 230 for allegedly corresponding to the recited at least one extension node (final Office Action, pg. 5). Applicant disagrees.

Applicant notes that the final Office Action relies on SHIMA et al.'s element 230, which is disclosed to be a peripheral device, for allegedly corresponding to the recited at least one extension node and for also corresponding to the gateway recited in Applicant's claim 1 (final Office Action, pg. 5). It is unclear how the final Office Action can reasonably allege that the same peripheral device 230 can correspond to two different elements recited in Applicant's claim 1. Such an attempt to reconstruct Applicant's claim would render elements of Applicant's claim 1 nonsensical. For example, claim 1 specifically recites a serial bus interconnecting the gateway and the one or more extension nodes. If, as alleged in the final Office Action, the recited gateway and the one or more extension nodes were in fact the same element, there would be no need for a serial bus that interconnects peripheral device 230 to itself. Moreover, claim 1 specifically recites that stream data transferred on the serial bus are exchanged through the gateway between an outside line and an extension node or between a first extension

node and a second extension node. Clearly, if the gateway and the one or more extension nodes were the same element, as alleged in the final Office Action, this feature of claim 1 would be rendered nonsensical. Applicant submits that the final Office Action's allegation that the gateway and the one or more extension nodes are the same element is clearly unreasonable. Withdrawal of this allegation is respectfully requested.

The final Office Action also points to SHIMA et al.'s elements 110-150 as allegedly corresponding to the recited one or more extension nodes (final Office Action, pg. 5). SHIMA et al.'s elements 110-150 correspond to a digital video camera, a digital video monitor, a computer, a digital video cassette recorder (VCR), and a printer, respectively. SHIMA et al. in no way discloses or suggests that any of these elements 110-150 includes a control/memory unit for storing physical identifiers and telephone numbers of the gateway node and extension nodes and for controlling the network, thereby allowing the at least one extension node to transmit and receive stream data from outside telephone numbers and from telephone numbers of other extension nodes; an asynchronous interface, for selecting the extension node and controlling a switching timing, connected with the control/memory unit; a rate conversion unit for converting a data rate of the stream data in the network into that in the outside line, or for converting a data rate of stream data in the outside line into that of the network switching system; and an isochronous interface, for transmitting and receiving the stream data, connected with the rate conversion unit, as required by claim 1. If this rejection is maintained, Applicant requests that the Examiner specifically point out where in SHIMA et al. it is disclosed that digital video camera 110, digital video monitor 120, computer 130, digital VCR 140,

or printer 150 includes the control/memory unit, asynchronous interface, rate conversion unit, and isochronous interface recited in Applicant's claim 1.

The disclosures of EDHOLM and AKATSU et al. do not remedy the above deficiencies in the disclosure of SHIMA et al.

For at least the foregoing reasons, Applicant submits that claim 1 is patentable over SHIMA et al., EDHOLM, and AKATSU et al., whether taken alone or in any reasonable combination.

Claims 2-4, 10, and 11 depend from claim 1. Therefore, these claims are patentable over SHIMA et al., EDHOLM, and AKATSU et al., whether taken alone or in any reasonable combination, for at least the reasons given above with respect to claim 1. Moreover, these claims recite additional features not disclosed or suggested by SHIMA et al., EDHOLM, and AKATSU et al.

For example, claim 4 recites that the asynchronous interface and the isochronous interface are connected with a bus manager which controls the asynchronous interface, the isochronous interface, the control/memory unit, and the rate conversion unit. SHIMA et al., EDHOLM, and AKATSU et al., whether taken alone or in any reasonable combination, do not disclose or suggest this combination of features.

At the outset, Applicant notes that since SHIMA et al., EDHOLM, and AKATSU et al. do not disclose or suggest an extension node that includes an asynchronous interface, an isochronous interface, a control/memory unit, and a

rate conversion unit, SHIMA et al., EDHOLM, and AKATSU et al. cannot disclose a bus manager that controls these features.

The final Office Action relies on col. 4, lines 30-42, col. 5, lines 1-20, and col. 6, line 37 to col. 7, line 35 of SHIMA et al. and col. 2, line 40 to col. 3, line 13, and col. 5, line 4 to col. 6, line 31 (especially col. 6, lines 16-31) of AKATSU et al. for allegedly disclosing the bus manager of claim 4 (final Office Action, pg. 8). Applicant submits that these sections of SHIMA et al. and AKATSU et al. do not disclose or suggest the above features of claim 4.

At col. 4, lines 30-42, SHIMA et al. discloses:

> Memory 330 provides temporary storage for the voice and data signals transferred between outside telecommunications network 210 and multimedia network 100. Specifically, memory 330 buffers the digital voice and data signals received by network interface card 310 from telecommunications network 210 before the signals are transmitted by bus interface 340 to telecommunications network 100. Likewise, memory 330 buffers the digital voice and data signals received by bus interface 340 from multimedia network 100 before the signals are transmitted by network interface card 310 to telecommunications network 210. Memory 330 preferably is a DRAM, but may constitute any other high-speed read/write memory.

The final Office Action appears to allege that SHIMA et al.'s memory 330 corresponds to the recited bus manager. This section of SHIMA et al. discloses a memory 330 that temporarily stores voice and data signals. SHIMA et al. in no way discloses or suggests that memory 330 acts in any other capacity than is commonly known in the art - i.e., storing data. Therefore, SHIMA et al.'s memory 330 cannot correspond to the recited bus manager. This section of SHIMA et al. in no way discloses or suggests a bus manager that connects to an

asynchronous interface and an isochronous interface and controls the asynchronous interface, the isochronous interface, a control/memory unit, and a rate conversion unit, as required by claim 4.

At col. 5, lines 1-20, SHIMA et al. discloses:

> FIG. 4 illustrates exemplary protocols consistent with the present invention for establishing and maintaining an incoming voice call connection between a device in telecommunications network 210 and a device in multimedia network 100. When a caller in telecommunications network 210 dials up the destination address (e.g., telephone number) assigned to multimedia network 100, peripheral device 230 receives a voice call request in accordance with, for example, xDSL standards (stage 405).
>
> Peripheral device 230 allocates the amount of bandwidth needed to support the voice signal (e.g., 64 Kbps) to the voice connection (stage 410). Peripheral device 230 then broadcasts the voice signal by sending an incoming call indication (e.g., a ring signal) to the consumer electronics devices in multimedia network 100 (stage 415). Alternatively, peripheral device 230 sends an incoming call indication (e.g., a ring signal) to only those consumer electronics devices capable of receiving voice signals. In a preferred embodiment, peripheral device 230 uses asynchronous data transfer protocols during broadcast stage 415.

At the outset, Applicant notes that this section of SHIMA et al. does not mention memory 330, which the final Office Action appears to allege corresponds to the recited bus manager. Nonetheless, this section of SHIMA et al. in no way discloses or suggests a bus manager that connects to an asynchronous interface and an isochronous interface and controls the asynchronous interface, the isochronous interface, a control/memory unit, and a rate conversion unit, as required by claim 4. Instead, this section of SHIMA et al. merely discloses that peripheral device 230 allocates bandwidth for an incoming voice call.

At col. 6, line 37 to col. 7, line 35, SHIMA et al. discloses a process for establishing and maintaining data communications between a multimedia network 100 and an originating device in a telecommunications network 210 and a process for allocating bandwidth for a voice call. Applicant notes once again that this section of SHIMA et al. does not mention memory 330, which the final Office Action appears to allege corresponds to the recited bus manager. Nonetheless, this section of SHIMA et al. in no way discloses or suggests a bus manager that connects to an asynchronous interface and an isochronous interface and controls the asynchronous interface, the isochronous interface, a control/memory unit, and a rate conversion unit, as required by claim 4.

At col. 2, line 40 to col. 3, line 3, AKATSU et al. discloses:

> With regard to the myriad interconnection wires in more complex home entertainment systems, one solution is the IEEE 1394-1995 standard and its extensions IEEE 1394a, and IEEE 1394b, which are referred to herein as "IEEE 1394". In one embodiment, a IEEE 1394 cable is a six strand cable: one strand for power, one strand for ground, two strands for data, and two strands for strobes used to synchronize the data strands. In an alternative embodiment, a four strand cable can be used, omitting the power and ground strands. IEEE 1394 cable also comprises a shield, which prevents electromagnetic interference. At its core, IEEE 1394 cable is essentially a high performance serial bus, having data rates as of this present writing of up to 400 megabits per second.
>
> Advantageously, the IEEE 1394 bus reduces the need for the myriad wires in a home entertainment system, as the component electronic devices may be designed to receive power and communication through the IEEE 1394 cable, thereby reducing the connections needed for most devices to as few as a single cable in a backplane bus environment. The IEEE 1394-1995 standard provides a specification for aspects of the physical, link and transaction layers for implementing of the IEEE 1394 bus, including provisions for such functions as resetting the bus, bus arbitration, node configuration, standard packet structures, initializing packet transmission, sending and receiving asynchronous packets, sending and receiving

> isochronous packets, transaction control, and error detection and correction.
>
> Communication over IEEE 1394 bus differs from many previous technologies in that it is purely digital. In particular, data carried on the IEEE 1394 bus is either digital from the source (e.g., a CD-ROM), or it must be converted by an analog-to-digital converter before being placed on the IEEE 1394 bus. Further, communication in a IEEE 1394-based system is peer-to-peer, i.e., each device (a.k.a. "node") on the IEEE 1394 bus can communicate with any other node without requiring communication/control requests to be processed through a central device/node (e.g., as is required in a "client-server" type configuration). In a IEEE 1394-based system, the controller can reside in any node, so in a sense, the IEEE 1394 bus itself becomes the controller

This section of AKATSU et al. discloses information regarding an IEEE 1394 bus. This section of AKATSU et al. in no way discloses or suggests a bus manager that connects to an asynchronous interface and an isochronous interface of an extension node and controls the asynchronous interface, the isochronous interface, a control/memory unit, and a rate conversion unit of the extension node, as required by claim 4.

At col. 5, line 4 to col. 6, line 31; AKATSU et al. discloses two IEEE 1394 backplane environments 216 bridged to an IEEE 1394 cable environment 212. This section of ATKATSU et al. discloses a serial bus management layer 416 that is part of a protocol stack 400. Serial bus management layer 416 provides bus management, isochronous resource management, and node control. This section of AKATSU et al. does not disclose or suggest, however, that serial bus management layer 416 connects to an asynchronous interface and an isochronous interface of an extension node and controls the asynchronous interface, the

isochronous interface, a control/memory unit, and a rate conversion unit of the extension node, as required by claim 4.

For at least these additional reasons, Applicant submits that claim 4 is patentable over SHIMA et al., EDHOLM, and AKATSU et al., whether taken alone or in any reasonable combination.

Independent claim 5 is directed to a gateway that includes a first switching unit for controlling extension nodes connected with a serial bus for isochronous transfer and a second switching unit for exchanging stream data between an outside line and the extension nodes. The first switching unit comprises a server bus manager connected with an asynchronous interface and an isochronous interface. The second switching unit comprises a line manager connected with a codec and a control/memory unit. The line manager exchanges the stream data between the outside line and at least one of the extension nodes, according to a request from the bus manager. The server bus manager manages a call-in to the extension node and a call-out from the extension node. Each of the at least one extension nodes is identified by a unique physical identifier and selectively identified by a unique telephone number. SHIMA et al., EDHOLM, and AKATSU et al., whether taken alone or in any reasonable combination, do not disclose or suggest this combination of features.

For example, SHIMA et al., EDHOLM, and AKATSU et al. do not disclose or suggest a line manager that exchanges stream data between an outside line and at least one of the extension nodes according to a request from a bus

manager. The final Office Action alleges that SHIMA et al.'s microcontroller 320 (Fig. 3) corresponds to the recited line manager (final Office Action, pg. 8). Applicant disagrees.

SHIMA et al. discloses that microcontroller 320 determines whether sufficient bandwidth exists to support a requested connection and maintains a real time accounting of the amount of bandwidth currently used on serial bus 160 and telephone line 220 (col. 4, lines 45-50). SHIMA et al. in no way discloses or suggests, however, that microcontroller 320 exchanges stream data between an outside line and at least one of the extension nodes according to a request from a bus manager, as required by claim 5. In fact, the final Office Action admits that SHIMA et al. does not disclose a bus manager (final Office Action, pg. 10). It is unclear how the final Office Action can reasonably allege that SHIMA et al. discloses that microcontroller 320 exchanges stream data between an outside line and at least one of the extension nodes according to a request from a bus manager, when the final Office Action admits that SHIMA et al. does not disclose a bus manager.

Nonetheless, SHIMA et al.'s microcontroller 320 does not exchange stream data between an outside line and at least one of the extension nodes according to a request from a bus manager, but merely determines whether sufficient bandwidth exists to support a requested connection and maintains a real time accounting of the amount of bandwidth currently used on serial bus 160 and telephone line 220 (col. 4, lines 45-50).

SHIMA et al., EDHOLM, and AKATSU et al. do not further disclose a server bus manager that connects with an asynchronous interface and an isochronous interface and manages a call-in to an extension node and a call-out from an extension node. The final Office Action admits that SHIMA et al. and EDHOLM do not disclose these features and relies on col. 2, line 40 to col. 3, line 13, and col. 5, line 4 to col. 6, line 31 (especially col. 6, lines 16-31), of AKATSU et al. for allegedly disclosing these features of claim 5 (final Office Action, pg. 10). Applicant submits that these sections of AKATSU et al. do not disclose or suggest the above features of claim 5.

At col. 2, line 40 to col. 3, line 3, AKATSU et al. discloses:

> With regard to the myriad interconnection wires in more complex home entertainment systems, one solution is the IEEE 1394-1995 standard and its extensions IEEE 1394a, and IEEE 1394b, which are referred to herein as "IEEE 1394". In one embodiment, a IEEE 1394 cable is a six strand cable: one strand for power, one strand for ground, two strands for data, and two strands for strobes used to synchronize the data strands. In an alternative embodiment, a four strand cable can be used, omitting the power and ground strands. IEEE 1394 cable also comprises a shield, which prevents electromagnetic interference. At its core, IEEE 1394 cable is essentially a high performance serial bus, having data rates as of this present writing of up to 400 megabits per second.
>
> Advantageously, the IEEE 1394 bus reduces the need for the myriad wires in a home entertainment system, as the component electronic devices may be designed to receive power and communication through the IEEE 1394 cable, thereby reducing the connections needed for most devices to as few as a single cable in a backplane bus environment. The IEEE 1394-1995 standard provides a specification for aspects of the physical, link and transaction layers for implementing of the IEEE 1394 bus, including provisions for such functions as resetting the bus, bus arbitration, node configuration, standard packet structures, initializing packet transmission, sending and receiving asynchronous packets, sending and receiving isochronous packets, transaction control, and error detection and correction.

> Communication over IEEE 1394 bus differs from many previous technologies in that it is purely digital. In particular, data carried on the IEEE 1394 bus is either digital from the source (e.g., a CD-ROM), or it must be converted by an analog-to-digital converter before being placed on the IEEE 1394 bus. Further, communication in a IEEE 1394-based system is peer-to-peer, i.e., each device (a.k.a. "node") on the IEEE 1394 bus can communicate with any other node without requiring communication/control requests to be processed through a central device/node (e.g., as is required in a "client-server" type configuration). In a IEEE 1394-based system, the controller can reside in any node, so in a sense, the IEEE 1394 bus itself becomes the controller

This section of AKATSU et al. discloses information regarding an IEEE 1394 bus. This section of AKATSU et al. in no way discloses or suggests a server bus manager that connects with an asynchronous interface and an isochronous interface and manages a call-in to an extension node and a call-out from an extension node, as required by claim 5.

At col. 5, line 4 to col. 6, line 31, AKATSU et al. discloses two IEEE 1394 backplane environments 216 bridged to an IEEE 1394 cable environment 212. This section of ATKATSU et al. discloses a serial bus management layer 416 that is part of a protocol stack 400. Serial bus management layer 416 provides bus management, isochronous resource management, and node control. This section of AKATSU et al. does not disclose or suggest, however, that serial bus management layer 416 connects with an asynchronous interface and an isochronous interface and manages a call-in to an extension node and a call-out from an extension node, as required by claim 5.

For at least the foregoing reasons, Applicant submits that claim 5 is patentable over SHIMA et al., EDHOLM, and AKATSU et al., whether taken alone or in any reasonable combination.

Independent claim 6 is directed to an information terminal that includes a telephone for transmitting and receiving a telephone signal through a serial bus; a television (TV) set for receiving a TV signal through the serial bus; and a bus manager for controlling the serial bus. The bus manager comprises two pairs of an asynchronous interface and an isochronous interface for the telephone signal and the TV signal, respectively. The information terminal also includes a memory to store a telephone number selectively unique to the information terminal. SHIMA et al., EDHOLM, and AKATSU et al., whether taken alone or in any reasonable combination, do not disclose or suggest this combination of features.

For example, SHIMA et al., EDHOLM, and AKATSU et al. do not disclose or suggest a telephone for transmitting and receiving a telephone signal through a serial bus. The final Office Action relies on col. 5, line 1 to col. 6, line 5, of SHIMA et al. for allegedly disclosing this feature (final Office Action, pg. 10). Applicant disagrees.

At col. 5, line 1 to col. 6, line 5, SHIMA et al. discloses that when a caller in a telecommunications network 210 calls up multimedia network 100, peripheral device 230 receives the call request in accordance with xDSL standards. Peripheral device 230 sends an incoming call indication to consumer

electronics 110-150 in network 100. If none of consumer electronics 110-150 answers the incoming call indication, then peripheral device 230 initiates a voicemail or answering machine function. If a consumer electronic device 110-150 responds to the call indication, the call is connected and peripheral device 230 transfers digital voice signals between the responding consumer electronic device 110-150 and the device in telecommunications network 210 using isochronous data transfer protocols.

SHIMA et al. discloses that consumer electronics 110-150 connect to a serial bus 160. SHIMA et al. does not disclose, however, that consumer electronics 110-150 include a telephone. Instead, SHIMA et al. discloses that consumer electronics 110-150 include a printer 110, a digital monitor 120, a video camcorder 130, an electronic still camera 140, and a video cassette recorder 150 (col. 3, lines 62-65). SHIMA et al. discloses that consumer electronics 110-150 could include other devices, but does not identify a telephone as one of those devices. Instead, SHIMA et al. specifically discloses that peripheral device 230 can include a telephone (col. 3, lines 38 and 39). While peripheral device 230 connects to serial bus 160, it would be readily appreciated that telephone signals for the telephone included in peripheral device 230 would not traverse serial bus 160. Instead, the telephone included in peripheral device 230 would receive the telephone signals via telephone line 220, as indicated in Fig. 3. Therefore, SHIMA et al.'s telephone does not transmit and receive a telephone signal through a serial bus, as required by claim 6.

SHIMA et al., EDHOLM, and AKATSU et al. do not further disclose or suggest a TV set for receiving a TV signal through the serial bus. The final Office Action admits that SHIMA et al. and EDHOLM do not disclose this feature (final Office Action, pg. 11). The final Office Action relies on Figs. 5 and 6 and col. 6, line 33 to col. 7, line 10, of AKATSU et al. for allegedly disclosing this feature (final Office Action, pg. 11). Applicant submits that those sections of AKATSU et al. do not disclose or suggest the above feature of claim 6.

These sections of AKATSU et al. appear to disclose a television adapter that connects a TV set to a 1394 link 616. AKATSU et al. in no way discloses or suggests, however, that 1394 link also allows a telephone to transmit and receive a telephone signal, as required by claim 6. Put another way, claim 6 does not merely recite a TV set for receiving a TV signal through a serial bus, but specifically recites that the TV set receives the TV signal through the same serial bus that allows a telephone to transmit and receive a telephone signal. None of the references of record in any way discloses or suggests these features.

Further with respect to these features, the final Office Action alleges that "[i]t would have been obvious ... to have a terminal be a television (TV) set for receiving a TV signal through said serial bus in order to allow a user to watch television" (final Office Action, pp. 11-12). Applicant submits that the final Office Action's motivation in no way addresses why one skilled in the art would reasonably seek to incorporate a telephone and TV set that connect to the same serial bus into the SHIMA et al. system. Instead, the final Office Action's

motivation simply indicates that TV sets allow users to watch television. Applicant submits that the only motivation for combining AKATSU et al. with SHIMA et al. and EDHOLM is impermissibly based on hindsight.

For at least the foregoing reasons, Applicant submits that claim 6 is patentable over SHIMA et al., EDHOLM, and AKATSU et al., whether taken alone or in any reasonable combination.

Claim 15 depends from claim 6. Therefore, this claim is patentable over SHIMA et al., EDHOLM, and AKATSU et al., whether taken alone or in any reasonable combination, for at least the reasons given above with respect to claim 6.

Independent claim 7 is directed to a gateway that includes a telephone gateway, a TV gateway, and a server bus manager connected to the telephone gateway and the TV gateway. The telephone gateway transfers a telephone signal from a public switched telephone network to a serial bus, and transfers a telephone signal from the serial bus to the public switched telephone network. The telephone gateway has a capacity to interconnect to at least one telephone terminal via the serial bus, wherein the interconnect is controlled by a telephone number identification such that each of the at least one telephone terminal has a unique physical identifier and selectively has a unique telephone number. The TV gateway receives a TV signal from a TV line, and transfers the TV signal to the bus manager. The bus manager comprises two pairs of an asynchronous interface and an isochronous interface for transferring the telephone signal and the

TV signal, respectively. SHIMA et al., EDHOLM, and AKATSU et al., whether taken alone or in any reasonable combination, do not disclose or suggest this combination of features.

For example, SHIMA et al., EDHOLM, and AKATSU et al. do not disclose or suggest a telephone gateway that has a capacity to interconnect to at least one telephone terminal via a serial bus. The final Office Action relies on col. 5, line 1 to col. 6, line 5, of SHIMA et al. for allegedly disclosing this feature (final Office Action, pg. 12). Applicant disagrees.

At col. 5, line 1 to col. 6, line 5, SHIMA et al. discloses that when a caller in a telecommunications network 210 calls up multimedia network 100, peripheral device 230 receives the call request in accordance with xDSL standards. Peripheral device 230 sends an incoming call indication to consumer electronics 110-150 in network 100. If none of consumer electronics 110-150 answers the incoming call indication, then peripheral device 230 initiates a voicemail or answering machine function. If a consumer electronic device 110-150 responds to the call indication, the call is connected and peripheral device 230 transfers digital voice signals between the responding consumer electronic device 110-150 and the device in telecommunications network 210 using isochronous data transfer protocols.

SHIMA et al. discloses that consumer electronics 110-150 connect to a serial bus 160. SHIMA et al. does not disclose, however, that consumer electronics 110-150 include a telephone terminal. Instead, SHIMA et al. discloses

that consumer electronics 110-150 include a printer 110, a digital monitor 120, a video camcorder 130, an electronic still camera 140, and a video cassette recorder 150 (col. 3, lines 62-65). SHIMA et al. discloses that consumer electronics 110-150 could include other devices, but does not identify a telephone terminal as one of those devices. Instead, SHIMA et al. specifically discloses that peripheral device 230 can include a telephone (col. 3, lines 38 and 39). While peripheral device 230 connects to serial bus 160, SHIMA et al. does not disclose or suggest that the telephone within peripheral device 230 connects to a telephone gateway via a serial bus, as required by claim 7.

For at least the foregoing reasons, Applicant submits that claim 7 is patentable over SHIMA et al., EDHOLM, and AKATSU et al., whether taken alone or in any reasonable combination.

Claim 18 depends from claim 7. Therefore, this claim is patentable over SHIMA et al., EDHOLM, and AKATSU et al., whether taken alone or in any reasonable combination, for at least the reasons given above with respect to claim 7.

Claims 8, 9, 19, and 20 stand rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over SHIMA et al. in view of EDHOLM. Applicant respectfully traverses.

Independent claim 8 is directed to a call-in signal processing method for a network switching system using asynchronous and isochronous transfer modes, wherein stream data transferred on a serial bus are exchanged through a gateway

between an outside line and an extension node, or between a first extension node and a second extension node. The method includes selecting, at the gateway, one of an automatic transfer by a number display, a global call-in, or a manual call-in on the basis of setup data; calling one or more extension nodes, each extension node having a unique physical identifier and selectively having a unique telephone number; securing one or more isochronous channels on the basis of responses from the extension nodes; allowing the extension nodes to start exchanging the stream data; and sending simultaneously a call status of a station of which call status is changed to all the extension nodes connected with the serial bus. SHIMA et al. and EDHOLM do not disclose or suggest this combination of features.

For example, SHIMA et al. and EDHOLM do not disclose or suggest selecting, at a gateway, one of an automatic transfer by a number display, a global call-in, or a manual call-in on the basis of setup data. The final Office Action admits that SHIMA et al. does not disclose this feature (final Office Action, pg. 17). The final Office Action relies on col. 6, lines 20-28, and col. 5, lines 39-54, of EDHOLM for allegedly disclosing the above feature of claim 8 (final Office Action, pg. 17). Applicant respectfully disagrees.

At col. 6, lines 20-28, EDHOLM discloses:

> The packetizer then queries memory 332 for the desired destination IP address (or IP addresses in the case of a conference call), and builds an IP packet header information using at least one of the returned destination IP addresses, a predetermined source IP address specified for the IP telephone 100, and the number of octets latched in from buffer 312

> (preferably a predetermined number to reduce circuit complexity and increase processing speed).

This section of EDHOLM discloses the ability to send packets to a single destination IP address or multiple IP addresses in the case of a conference call. The final Office Action alleges that the recited global call-in mode is equivalent to a conference call. Applicant disagrees.

As specifically disclosed in Applicant's specification, a global call-in involves signals being sent to all terminals (see, for example, page 18 of Applicant's disclosure). A conference call, on the other hand, is a call between a select group of telephones. A conference call is not, contrary to the allegation in the final Office Action, a call to all telephones. Therefore, EDHOLM's conference call is not equivalent to the global call-in mode recited in claim 8. This section of EDHOLM does not disclose or suggest selecting, at a gateway, one of an automatic transfer by a number display, a global call-in, or a manual call-in on the basis of setup data, as required by claim 8.

At col. 5, lines 39-45, EDHOLM discloses:

> Also, in the case of an incoming call, information involving the calling or called party may be obtained and displayed as is with the case of conventional calling line identification technology, since the originating VOIP device(s) IP address is contained in each packet received by the IP telephone.

This section of EDHOLM discloses the display of information regarding the calling or called party. This section of EDHOLM in no way discloses or suggests selecting, at a gateway, one of an automatic transfer by a number display, a global call-in, or a manual call-in on the basis of setup data, as required by claim 8. If

this rejection is maintained, Applicant requests that a reasonable explanation be provided as to how the above sections of EDHOLM can reasonably be alleged to correspond to the above feature of claim 8.

Even assuming, for the sake of argument, that the above sections of EDHOLM could reasonably be construed to disclose selecting, at a gateway, one of an automatic transfer by a number display, a global call-in, or a manual call-in on the basis of setup data, as required by claim 8, Applicant submits that one skilled in the art would not have been motivated to combine this alleged teaching of EDHOLM into the SHIMA et al. system, absent impermissible hindsight.

With respect to motivation, the final Office Action alleges "[i]t would have been obvious ... to select at the gateway which of an automatic transfer by number display, a global call-in, or a manual call-in on the basis of setup data in order to select the correct number of terminals for which the connection is destined and in order to determine the number of connections needed to complete the call" (final Office Action, pg. 17). Applicant disagrees.

At the outset, Applicant notes that SHIMA et al. specifically discloses that network 100, which includes consumer electronics 110-150, is assigned a telephone number (col. 5, lines 5-7). SHIMA et al. does not disclose or suggest that each electronic device in consumer electronics 110-150 is assigned a telephone number, but that merely the entire group is assigned a telephone number. Moreover, SHIMA et al. discloses that peripheral device 230 sends incoming call requests to all consumer electronic devices 110-150 or to only those

that are capable of receiving voice signals (col. 5, lines 12-20). Therefore, it is unclear why one would change the overall setup of the SHIMA et al. system to include the ability to provide selection of one of an automatic transfer by a number display, a global call-in, or a manual call-in on the basis of setup data. The final Office Action's allegation that such a selection would allow the SHIMA et al. system to select the correct number of terminals for which the connection is destined and in order to determine the number of connections needed to complete the call is unfounded since the SHIMA et al. system already performs these functions (or similar functions). Applicant submits that the final Office Action's motivation is impermissibly based on hindsight reasoning.

For at least the foregoing reasons, Applicant submits that claim 8 is patentable over SHIMA et al. and EDHOLM, whether taken alone or in any reasonable combination.

Claim 19 depends from claim 8. Therefore, this claim is patentable over SHIMA et al. and EDHOLM, whether taken alone or in any reasonable combination, for at least the reasons given above with respect to claim 8.

Independent claim 9 is directed to a call-out signal processing method for a network switching system using asynchronous and isochronous transfer modes, wherein stream data transferred on a serial bus is exchanged through a gateway between an outside line and an extension node, or between a first extension node and a second extension node. The method includes receiving, at the gateway, a call-out from an extension node; confirming, at the gateway, a call status of a call

object; securing an isochronous channel for transmission; sending the call status to all the extension nodes connected to the gateway, where each extension node has a unique physical identifier and selectively having a unique telephone number; securing an isochronous channel for reception; allowing the call object to start exchanging the stream data, when the call object has responded, while sending, to said extension node which carried out the call-out, a call status that indicates that the call object does not respond, when the call object has not responded; releasing the isochronous channels for transmission and reception, when detecting an on-hook of the extension node which has made the call-out; and sending the call status to all the extension nodes connected to the gateway. SHIMA et al. and EDHOLM do not disclose or suggest this combination of features.

For example, SHIMA et al. and EDHOLM do not disclose or suggest sending the call status to all the extension nodes connected to the gateway. The final Office Action relies on col. 7, lines 37-49, of SHIMA et al. for allegedly disclosing this feature (final Office Action, pg. 17). Applicant submits that this section of SHIMA et al. does not disclose or suggest the above feature of claim 9.

At col. 7, lines 37-49, SHIMA et al. discloses:

> Whenever a connection between multimedia network 100 and outside telecommunications network 210 is disconnected, peripheral device 230 makes the bandwidth from the terminated connection available to both newly requested connections (through the stages in FIG. 8) and established connections. In the case of established connections, peripheral device 230 preferably transmits a message to the active devices in multimedia network 100 informing them of the availability of the additional bandwidth. In one embodiment, peripheral device gives priority

> to those active devices which previously were unsuccessful in requesting additional bandwidth from peripheral device 230.

This section of SHIMA et al. discloses that an indication that additional bandwidth is available may be transmitted to the active devices in network 100. This section of SHIMA et al. in no way discloses or suggests that this indication includes the call status of a call object, as required by claim 9. Therefore, this section of SHIMA et al. does not disclose or suggest sending the call status to all the extension nodes connected to the gateway, as required by claim 9.

For at least the foregoing reasons, Applicant submits that claim 9 is patentable over SHIMA et al. and EDHOLM, whether taken alone or in any reasonable combination.

Claim 20 depends from claim 9. Therefore, this claim is patentable over SHIMA et al. and EDHOLM, whether taken alone or in any reasonable combination, for at least the reasons given above with respect to claim 9.

In view of the foregoing amendments and remarks, Applicant respectfully requests the Examiner's reconsideration of this application, and the timely allowance of the pending claims. Applicant respectfully requests that the present amendment be entered since the amendment does not raise new issues or require a further search of the art, but simply improves the form of the claims.

To the extent necessary, a petition for an extension of time under 37 C.F.R. § 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account No. 50-1070 and please credit any excess fees to such deposit account.

Respectfully submitted,

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